

<https://www.nextbigfuture.com/2018/01/battery-free-wireless-rfid-sensor-from-graphene-oxide-for-internet-of-things-applications.html>

Pandora's Promise: if you care about kids, go nuclear

November 8, 2013 by [Amy](#) · Comments Off
Filed under: [Archive](#)

By Dr. Robert Applegate

The opening scene of the documentary *Pandora's Promise* brings viewers face-to-face with nuclear power plant protestors screaming scary things like “the nuclear industry is a death industry.” Then it moves to a nuclear energy supporter walking around the destroyed nuclear power plant in Fukushima with the filmmaker Robert Stone asking are you still “pro-nuclear?”

At this point I was unsure where this film would take me. If this was a movie *really* about how nuclear power is clean and safe and our only option to combat climate change, or was this more of a movie trying to balance opinions rather than present fact. When the movie did jump into the facts of nuclear power, it did not disappoint. Explaining, for example, that one pound of nuclear fuel (about the size of your finger) holds the same amount of energy as 5000 barrels of oil.

The movie provides an overview of the origins of the hysteria over nuclear energy. It exposes the baby boomers who came of age during the height of the Cold War with elementary school duck-and-cover drills just in case the Soviets dropped *the* bomb. As a result, an entire generation, arguably the most influential generation, associated the word “nuclear” with bombs and destruction. Add this irrational fear to the lack of understanding of how and where electricity comes from, and the nuclear power industry was set up for failure by the 1980's.

Pandora's Promise does a decent job of talking about how the accessibility of energy is directly correlated to quality of life. People live longer and better lives when they can access power easily and inexpensively. Stone should have made this a bit stronger, especially since the movie is directed at environmentalists and why they need to reexamine nuclear power as an option to improving the quality of life in the developing world. The two billion people globally without electricity don't just need a clean environment; they need access to clean, reliable, and affordable power.

My favorite part came when Stone tours the globe with a dosimeter (a radiation-meter), showing people what physicists know; radiation exists naturally everywhere and in everything, and our bodies deal with it every day with no increased cancer risk. What's funny, and trust me the irony is not lost on physicists like me, Stone even shows a group of protestors having a “banana break” in which one is handing out bananas to eat while they are screaming about the horrors of radiation. Many people, except misguided protestors, know that a Geiger Counter (a machine

that measures radiation) next to a banana is quite noisy because bananas have a lot of naturally occurring radiation.

Contrary to popular myth, deaths from nuclear power are incredibly low. No one in the U.S. has died from a nuclear power related accident, including any radiation leaks, and this is pointed out in the film. Roughly 50 people did die at Chernobyl as a result of the accident there, but that isn't even close to the nonsensical "millions" number that one protester cites. The film crew braved Chernobyl revealing how the plant kept working nearly 10 years after the accident and how people went to work every day there with no increased cancer risk.

Stone also addresses the difficult topic of nuclear waste with a straightforward quote from an environmentalist who flat out says, "Nuclear waste is not an environmental issue" because there is simply very little of it.

The movie has an optimistic ending, talking about the future and how the newer reactor designs are incapable of melting down. Peaceful nuclear power is helping to reduce the number of nuclear warheads through recycling – 16,000 in the past 10 years recycled and now used to power cities. Bottom line: don't fear nuclear power. We need it to combat carbon emissions and raise two billion people out of poverty.

I know this is tough for old-school environmentalists but *Pandora's Promise* tried to be gentle with this message to the eco-left: your heart is in the right place, but your facts are wrong. Please reexamine your point of view, and you will change your mind. Do it for the sake of the kids you are trying to save.

To hear more about my take on *Pandora's Promise*, listen to my review on the [Amy Oliver Show on News Talk 1310 KFKA](#).

Now, go hug a nuclear power plant operator.

Dr. Robert Applegate has a PhD in Applied Physics from the Colorado School of Mines, has worked at Los Alamos National Laboratory, and is an advocate for science in public policy.